

# **MANUAL OF THE STRUCTURE AND BRIDGE DIVISION**

## **PART 2**

### **DESIGN GUIDELINES**



**VIRGINIA DEPARTMENT OF  
TRANSPORTATION**

**VDOT GOVERNANCE DOCUMENT**

**VDOT Manual of the Structure and Bridge Division**

**Part 2 - Design Guidelines**

**OWNING DIVISION: Structure and Bridge**

**DATE OF ISSUANCE: 4/28/2023**

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[RELEASE \(REVISION\) LETTERS \(complete set\)](#)



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, 23219-2000

**Stephen Brich**  
COMMISSIONER

April 28, 2023

**SUBJECT:** Manual of the Structure and Bridge Division – Part 2  
Design Guidelines

## MEMORANDUM

**TO:** Holders of Manual

**VOIDED:** None

**NEW ISSUES:** None

## REVISIONS:

### CHAPTER 1:

<u>File Number</u>	<u>Description of change(s)</u>
1.01-2	Give example dgn file name format.
1.01-3	Update the path of the seed file folder.

### CHAPTER 2:

<u>File Number</u>	<u>Description of change(s)</u>
2.03-2	Added a reference to the Superstructure Erection Stability special provision to the Construction Specification General Note.

### CHAPTER 3:

<u>File Number</u>	<u>Description of change(s)</u>
3.00	Deleted last sentence.
3.01-1, -2, -3, -4	Deleted "Bid" from the LS quantity table.
3.01-5	Minor revisions to note 5. In note 10, deleted the sentence that referred to the transport estimate.

**CHAPTER 3:**

<u>File Number</u>	<u>Description of change(s)</u>
3.01-6	Minor revisions to note 19.
3.01-7	Minor revisions to the notes.
3.04	Moved 3.13 to 3.04 (3.04 was previously blank)
3.05-1, -2	Revised instructions and footnotes. Many footnotes were deleted. Section 3.05 was condensed from 3 pages to 2 pages.
3.06 thru 3.11	Item codes updated to Construction Division's new format. Non-standard (NS) items were previously in 3.12 and also spread throughout the other sections. All NS items were move to 3.11. Terminology changed from "bid items" to "pay items" in order to match Construction Division terminology.
3.08	Items required on all projects was moved from 3.11 to 3.08

**CHAPTER 8:**

<u>File Number</u>	<u>Description of change(s)</u>
8.02-3, -4, -5 and -6	Updated the select backfill detail to agree with the details in Chapter 17.

**CHAPTER 12:**

<u>File Number</u>	<u>Description of change(s)</u>
12.03-2, 12.04-1	Added statement permitting self consolidating concrete.
12.05-1, 12.06-2, 12.07-1	Added statement permitting self consolidating concrete.
12.05-4, -10, -11	Deleted references to sample specials provisions for ECC and VHPC.
12.06-5, -10, -11	Deleted references to sample specials provisions for ECC and VHPC.
12.08-1	Moved the note about exposed piles to just below the Cities. Modified the note.
12.14-3	Revised note 3 to match the corresponding change to Part 4 standards.
12.14-4	Added note to the BC0602 bending diagram to match the corresponding change to Part 4 PCBT-MISC1 standard.
12.14-7	In Sections B-B and D-D, show the top leg of the BC0602 as the longer leg to match the Part 4 PCBT-CLOS1 standard.

**REVISIONS: (continued)**

CHAPTER 14:

<u>File Number</u>	<u>Description of change(s)</u>
14.03-1	Revised the dimensions to the stud in the sketch to match the updates made to the BDEJ-4.

CHAPTER 23:

<u>File Number</u>	<u>Description of change(s)</u>
23.05-1	Clarified corrosive environment criteria for sacrificial thickness of steel piles
23.05-3	Deleted note that was immediately below Site Condition D. Moved it to bottom of 23.05-1, and changed “lower” to “larger”.
23.05-4	Deleted the 2 <sup>nd</sup> to last sentence.

CHAPTER 26

<u>File Number</u>	<u>Description of change(s)</u>
26.01-1, -2, -3	Added the name of the cell library (PERMITSK1.CEL)

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# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF TRANSPORTATION

1401 EAST BROAD STREET  
RICHMOND, 23219-2000

**Stephen Brich**  
COMMISSIONER

October 31, 2022

**SUBJECT:** Manual of the Structure and Bridge Division – Part 2  
Design Aids – Typical Details

### MEMORANDUM

**TO:** Holders of Manual

**VOIDED:** None

**NEW ISSUES:** None

### REVISIONS:

#### CHAPTER 1:

<u>File Number</u>	<u>Description of change(s)</u>
1.14-4	Name of cell library in note 5.

#### CHAPTER 2:

<u>File Number</u>	<u>Description of change(s)</u>
2.01-1	Format of paint color in general note.
2.01-1 thru -5	Corrosion Resistant Reinforcing (CRR) steel note modified to agree with change to same note on 2.03-5.
2.02-7	Deleted SP for Needle-Punched, Non-Woven, Geotextile Fabric.
2.03-4	Format of paint color.
2.03-5	CRR steel note modified to agree with IIM-S&B-81.



**REVISIONS: (continued)**

CHAPTER 3:

<u>File Number</u>	<u>Description of change(s)</u>
3.06-2, 3.07-1, 3.09-2 and 3.10-1	Deleted pay item for 32" F-shape concrete parapet.
3.06-7, 3.09-5	Deleted pay item for Illinois Steel Railing.

CHAPTER 6:

<u>File Number</u>	<u>Description of change(s)</u>
6.01-2	Added guidance for horizontal clearance if future widening below the bridge is planned.
6.01-3	Deleted voided references in note K.
6.01-4	File references updated.
6.01-7	Added definition of "long bridges".
6.04-8	Deleted voided references in note C.
6.04-14	Deleted voided references in note E.
6.07-1, -2, -3, -7, -10 and -11	Change references from 6.08 to 6.07

CHAPTER 9:

<u>File Number</u>	<u>Description of change(s)</u>
9.02-4, -6, -7 and -8	Sidewalk/median epoxy detail revised to agree with updated detail on 25.03-3.

CHAPTER 11:

<u>File Number</u>	<u>Description of change(s)</u>
11.04-3	Corrected location of 407.04 spec reference for welded flange splice.

CHAPTER 12:

<u>File Number</u>	<u>Description of change(s)</u>
12.05-10 and -11	Updated name of Product Evaluation List and category.
12.06-10 and -11	Updated name of Product Evaluation List and category.
12.10-5	Deleted note 7, which prohibited stepped diaphragm patterns.
12.14-3 and -4	Updated sample sheets to agree with changes on the PCBT standards having to do with the bottom flange edge detail.

**REVISIONS: (continued)**

**CHAPTER 15:**

<u>File Number</u>	<u>Description of change(s)</u>
15.02-12	Deleted 2 <sup>nd</sup> paragraph under section on “Spread footing” because the topic is covered by guidance on 15.02-10.
15.06-1	Clarified note 2b.
15.06-2	Revised requirements for pier protection of existing piers.

**CHAPTER 17:**

<u>File Number</u>	<u>Description of change(s)</u>
17.03-2	Deleted paragraph below Abutment Stem Detail (it’s already covered by 17.02-1).
17.13-8	Revised requirements for separator fabric used with MSE walls.
17.13-11	Deleted page.

**CHAPTER 20:**

<u>File Number</u>	<u>Description of change(s)</u>
20.01-2	Added open bottom structures to the bullet about use of CRR.

**CHAPTER 25**

<u>File Number</u>	<u>Description of change(s)</u>
25.01-1 and -5	Deleted the Illinois Steel Railing (BIR series).
25.03-3	Revised sidewalk/median epoxy detail.
25.03-4	Updated name of Topical Committee Chairman in note C.

**CHAPTER 28:**

<u>File Number</u>	<u>Description of change(s)</u>
28.02-8 and -10	Corrected notes in the suggested jacking sequence.
28.04-2 and -3	Reactions updated and jacking capacity calculations clarified.

**RETAIN THIS MEMO IN FRONT OF INDEX TO PART 2**

**REVISIONS: (continued)**

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October 31, 2022

/original signed/  
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